

Virginia Department of Health
Botulism: Overview for Healthcare Providers

Organism/ Stability	<ul style="list-style-type: none"> • Toxin from <i>Clostridium botulinum</i>, an anaerobic, spore-forming bacterium • Unique strains of <i>Clostridium baratii</i> and <i>Clostridium butyricum</i> can also produce botulinum toxin • Toxin is sensitive to sunlight/heating; does not survive long outside the host • Naturally occurring forms: <u>foodborne</u>; <u>infant</u> (also called intestinal); <u>wound</u> • Used as a weapon for bioterrorism: <u>inhalation</u> or <u>foodborne</u>
Infective Dose	A few nanograms of toxin
Route of Infection	<ul style="list-style-type: none"> • During a bioterrorism event, release could be in the form of an aerosol or through intentional contamination of food or water • Unintentional exposure occurs through ingestion of contaminated food or through contamination of wounds (e.g., with botulinum spores found in soil)
Communicability	No person-to-person transmission has been documented
Risk Factors	All persons susceptible; intestinal colonization with bacterium occurs in infants/adults with altered GI anatomy/microflora; Injection drug users are at increased risk for wound botulism.
Case Fatality	Foodborne ~ 5-10%; Infant ~ 1%; Wound: some studies indicate ~ 10% Inhalation: Unknown
Incubation Period	<ul style="list-style-type: none"> • Foodborne: 12-36 hours (range 2 hours to 8 days) • Infant: unknown • Wound: approximately 7 days (range 4-21 days) • Inhalation: primate studies indicate 12 to 80 hours
Signs and Symptoms	<ul style="list-style-type: none"> • Patients typically present with visual disturbances and difficulty speaking and/or swallowing. • Neurological findings: ptosis, diplopia, blurred vision, often enlarged or sluggishly reactive pupils, dysarthria, dysphonia, and dysphagia. Descending, flaccid paralysis occurs, beginning in ocular and other cranial nerve functions, extending to trunk and limb muscles and leading to respiratory failure. • Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and poor muscle tone. May resemble “failure to thrive” or “floppy baby”.
Differential Diagnosis	Guillain-Barre syndrome and its variants, especially Miller-Fisher syndrome; myasthenia gravis; stroke; intoxication with depressants (eg, acute ethanol intoxication), organophosphates, carbon monoxide or nerve gas; Lambert-Eaton syndrome; tick paralysis
Laboratory Tests/ Sample Collection	<ul style="list-style-type: none"> • 10 cc of serum (usually 20 cc whole blood); stool; gastric aspirate or vomitus; tissue or exudates; if available, suspect food samples. Stool & serum are specimens of choice. List of patient medications should accompany samples. • For consult, page the state lab (DCLS), available 24/7, at 804-418-9923. Consult is necessary <u>before</u> shipment of specimens.
Treatment	<ul style="list-style-type: none"> • Supportive care; early intubation and mechanical ventilation is critical • Equine antitoxin should be given to patients with neurological signs of botulism as soon as possible after clinical diagnosis. Dose of licensed botulinum antitoxin = single 10-mL vial, diluted 1:10 in 0.9% saline solution, administered by slow intravenous infusion <i>Antitoxin is available only from CDC after consultation with public health</i> • Infant botulism is treated with investigational human derived botulinum immune globulin (BIG); to obtain BIG, contact the California Dept. of Health Services at (510) 540-2646
Infection Control	Use standard precautions; patients do not need to be isolated
Contacts	Asymptomatic persons who may have been exposed should remain under close medical observation and near critical care services.
Public Health	Suspected cases of botulism must be reported to the local public health department by the most rapid means available.